SOUTHERN CALIFORNIA
ASSOCIATION of GOVERNMENTS

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MEETING OF THE

GOODS MOVEMENT TASK FORCE

Wednesday, June 18, 2008
9:30 a.m. – 11:30 a.m.

SCAG Offices
818 West 7th Street, 12th Floor
Conference Room Riverside B
Los Angeles, CA 90017
213.236.1800

Video Conference & Teleconference will be available

Video Conference Location
Riverside SCAG Office
3600 Lime Street, #216
Riverside, CA 92501

If members of the public wish to review the attachments or have any questions on any of the agenda items, please contact Mike Jones at 213.236.1978 or jonesm@scag.ca.gov

SCAG, in accordance with the Americans with Disabilities Act (ADA), will accommodate persons who require a modification of accommodation in order to participate in this meeting. If you require such assistance, please contact SCAG at (213) 236-1868 at least 72 hours in advance of the meeting to enable SCAG to make reasonable arrangements. To request documents related to this document in an alternative format, please contact (213) 236-1868.

GOODS MOVEMENT TASK FORCE

AGENDA

"Any item listed on the agenda (action or information) may be acted upon at the discretion of the Committee".

			Pg.	
1.0	**CALL TO ORDER & PLEDGE OF ALLEGIANCE**	**Hon. Art Brown, Chair**		
2.0	**PUBLIC COMMENT PERIOD** **Members of the public desiring to speak on an agenda item or items not on the agenda, but within the purview of this committee, must fill out a speaker's card prior to speaking and submit it to the Staff Assistant. A speaker's card must be turned in before the meeting is called to order. Comments will be limited to three minutes. The Chair may limit the total time for comments to twenty (20) minutes.**			
3.0	**REVIEW and PRIORITIZE AGENDA ITEMS**			
4.0	**CONSENT CALENDAR**			
4.1	Approval Items			
4.1.1	Minutes of May 21, 2008 Meeting **Attachment**			
5.0	**INFORMATION ITEMS**			
5.1	Inland Port Feasibility Study Presentation on draft report of Tasks 3-5 of the Inland Port Feasibility Study **Attachment**	Mr. Dan Smith, The Tioga Group	9	25 minutes
5.2	Cities of Port Hueneme/Oxnard Truck Traffic Study Presentation on subregional Cities of Port Hueneme and Oxnard Truck Traffic Study **Attachment**	Mr. Bill Delo, IBI Group	15	15 minutes
5.3	Port and Modal Elasticity Study Phase II Overview of key findings and insights from the Port and Modal Elasticity Study Phase II.	Mr. Robert Leachman, Leachman and Assoc.	41	25 minutes

6.0 STAFF REPORT

7.0 COMMENT PERIOD

7.0 NEXT MEETING

The date of the next Goods Movement Task Force meeting is to be determined.

8.0 ADJOURNMENT

GOODS MOVEMENT TASK FORCE
of the
SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS

May 21, 2008
Minutes

THE FOLLOWING MINUTES ARE A SUMMARY OF ACTIONS TAKEN BY THE GOODS MOVEMENT TASK FORCE. AN AUDIOCASSETTE TAPE OF THE ACTUAL MEETING IS AVAILABLE FOR LISTENING IN SCAG'S OFFICE.

The Goods Movement Task Force held its meeting at the SCAG office in Los Angeles. The meeting was called to order by the Honorable Art Brown, Chair, City of Buena Park.

Members Present

Art Brown	City of Buena Park
Lou Bone	City of Tustin
Philbert Wong	Metro
Ron Guss	California Trucking Association
Larisa Bolotsk	LADOT
Sharon Neely	ACE Construction Authority
Andrea Hricko	USC
Jeffrey Spencer	Caltrans, Office of Goods Movement, Headquarters
Robert Machuca	Metro
Tom O'Brien	METRANS/CSULB
Sam Morrissey	Wilbur Smith Associates
Susan Bok	LADOT
Kathleen Wanda	Caltrans, District 7
Cory Zelmer	Metro
Barry Engleberg	OCTA
Carl Farrington	SCIC
Nancy Pfeffer	Gateway Cities COG/NPA
Eric Shen	POLB

SCAG Staff

Joseph Alcock
Mike Jones
Cheryl Leising
Wesley Hong
Juan Camacho
Llewellyn Miller
Akiko Yamagami
Alan Thompson

GOODS MOVEMENT TASK FORCE
of the
SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS

May 21, 2008
Minutes

Via Teleconference

Steve Smith	SANBAG
Hon. Bonnie Flickinger	City of Moreno Valley
Hon. Lawrence Dale	City of Barstow
Rachel Lopez	CCAEJ
Joe Sanford	Caltrans

1.0 CALL TO ORDER

The Hon. Art Brown, Chair, called the meeting to order at 9:37 a.m.

2.0 PUBLIC COMMENT PERIOD

There were no public comments.

3.0 REVIEW and PRIORITIZE AGENDA ITEMS

4.0 CONSENT CALENDAR

4.1 Approval Item

4.1.1 February 20, 2008 Minutes

A **MOTION** was made to approve the Consent Calendar.
The **MOTION** was **SECONDED** and **UNAMIOUSLY APPROVED.**

Correction on page 4, next to last paragraph, last line where it reads, the MCGAMP project partners have undertaken an environmental justice analysis and outreach plan for the Plan's projects. It should read are undertaking rather than have.

5.0 INFORMATION ITEMS

5.1 Downtown Los Angeles Freeway System Study

Mr. Lee Ward, Iteris, Inc., stated that in conjunction with SCAG, LADOT, and Caltrans staff, Iteris has conducted a study of the downtown Los Angeles freeway

ring. The study focused on consideration of fundable improvements that could make the current system functional in the near future.

The study area included mainline ramps, and surface street access to and from ramps, in an attempt to identify feasible, cost-effective improvements to the downtown freeway system. Caltrans and LADOT provided a listing of projects and identified concerns for the downtown area. The following key observations were made from the list:

- Downtown Los Angeles freeways will remain congested
  - Forecasts for the year 2030 show increased volumes
  - Regional (pass-though) traffic is significant
- A regional approach is needed to manage congestion and mobility
  - Transit improvements and expansion
  - Land use policy
- Opportunities to address freeway bottlenecks and operation deficiencies exist
  - Optimize system capacity by eliminating bottlenecks
  - Develop feasible and cost-effective projects and programs

The improvement projects were put into three tiers: 1) short-term, 2) mid-term, and 3) long-term (projects that are more expensive and have environmental concerns). Projects included activities related to freeway ingress and egress points, signage, street marking, signals, and the interface among local streets. Five priority projects were identified:

1) Addition of a northbound auxiliary lane on US-101 from the SR-110 to the Glendale Boulevard off-ramp;
2) Restripe the eastbound I-10 collector road to southbound SR-110 and Grand Avenue;
3) Ramp improvements at seven locations to accommodate truck access;
4) Phased extension of the auxiliary land on the northbound and southbound US-101 from Glendale to Vermont; and
5) Realignment and signalization of the 3rd Street off-ramp at the northbound SR-110.

LADOT and Caltrans are currently going into the project development process and looking to identify funding. Once funding is has been secured, the projects can move into the design, environmental conformity, and construction phases. The timing of each project will vary, spreading out the requests for budgets.

5.2 Regional Air Cargo Forecasts

Mike Armstrong, SCAG, stated that the regional air cargo forecasts were prepared for the 2008 Regional Transportation Plan (RTP). The air cargo forecast are tied to the region's passenger forecast as they are based upon the same basic scenario defined by both the Aviation Task Force (ATF) and the Aviation Technical Advisory Committee (ATAC). Both agencies are populated with technical people in the aviation industry who provide input on aviation issues. The ATF is also comprised of elected officials as well as people from the business community.

A number of controversial issues surrounding the assumptions used to create the forecast, such as the expected growth as LAX, have been addressed. The aviation strategy in the RTP is based on policies and incentives decentralize demand to the extent possible from constrained urban airports to outlying suburban airports with available capacity. Ground access improvements, including a regional high-speed rail system, are critical to achieving the Plan's objectives. The Plan and regional forecasts considered capacity challenges at regional airports, For example, SCAG has an agreement with the March Joint Powers Authority to honor the airport's joint-use agreement with the Air Force which has placed operational limitations on the facility.

Airports in the forecast include LAX, Long Beach, Bob Hope, John Wayne, Ontario, Palmdale, March Inland Port, San Bernardino International, Southern California Logistics, and Palmdale Regional Airport. Cargo was allocated to all these airports except for Oxnard and Imperial. The forecast for the 2008 RTP was somewhat lower than the 2004 RTP forecast due to stagnate growth in air cargo volumes. Domestically, a significant amount of cargo that was previously transported by air is now moved by ships, trucks or trains. This appears to be a result of time-definite structure that has developed in order for businesses to meet just-in-time delivery requirements for supply chain networks. Whiile growth in air cargo remained relatively flat between 2003 and 2007, passenger growth steadily increased by more than 3% per year.

A sophisticated computer modeling procedure is performed using the Regional Aviation Demand Model (RADAM) to complete SCAG's RTP forecast. The model has air passenger and air cargo components and recognizes thousands of variables. The main variables include the SCAG Demographic Forecast, truck

travel times from shipment points, location of intermodal centers, and the distance between warehouse centers and airport terminals. In the past, most air cargo, 80% or more, was transported in the belly holds of passenger planes. Currently, upwards of 70% of the cargo is now carried by dedicated all cargo freighters. This trend has implications for airport planning with regard to the facility, the runways, the taxi ways, air space, and warehouse facilities. Decisions on the transportation of air cargo are governed through contractual agreements. Large shippers have multi-year contracts with large carriers like UPS and FEDEX. This was reflected in staff's surveys and built into the model through asymmetric logic. Contractual agreements that major shippers have with the major carriers are built into the modeling process.

The results of the forecast scenarios were differentiated by assumptions related to a high-speed rail system. A constrained scenario with very conservative assumptions about future airline investment behavior, no high-speed rail, and no market incentives was also modeled and resulted in a forecast of approximately 7.6 million tons of cargo. The preferred scenario includes market incentives, a number of ground access improvements, and more liberal assumptions about airline investment behavior, but no high-speed rail. This led to a forecast of nearly 8.1 million tons of cargo. The scenario including a full system of high-speed rail that connected to March Inland Port projected 8.3 million tons of cargo. The final scenario that was adopted for the 2008 RTP included the extended Initial Operating Segment (IOS) of the high-speed rail system. This resulted in an adopted forecast of 8.2 million tons of cargo by 2035.

5.3 Truck Parking in the SCAG Region

Jeff Spencer, Caltrans, Office of Goods Movement, stated that growth in truck volumes is related to local development. As an area grows, its demand for goods increases. In the SCAG region, there is substantial existing economic, warehousing and intermodal development that generates truck trips. Distance is a key element in determining whether goods are transported by truck or a rail. Most train trips, when hauling cargo, have to be greater than seven hundred miles to be cost-effective. Within the SCAG region, warehousing and intermodal facilities are widely dispersed.

Safety in truck travel is primarily focused on the driver. Driver fatigue and extended hours of driver service account for 8.15% of all fatal crashes and 16% of all truck crashes. The lack of safe and available parking, on both the public and private side,

contributes to the fatigue. As encroachment for development continues in the region, the development of truck stops and highway rest areas are less desirable. As a result, illegal truck parking increases throughout the region Caltrans is trying to find ways to reduce the number and severity of truck crashes.

Currently, deteriorating trip reliability is affecting hours of service in the region. For instance, within the SCAG region, drivers picking up at the Ports must navigate through regional congestion resulting in reduced efficiency.

Most of the cargo arriving into Ports of Long Beach and Los Angeles are distributed nationally. Forty-two percent of the consumable goods in the United States come through the Ports. If the Port of Oakland is included, this would be about fifty-three percent. Air quality is also a major concern. The four major trade corridors within the State closely align with the areas faced with air conformity challenges. Caltrans is implementing Intelligent Transportation Systems to make the truck routes more efficient through acidities such as routing, dispatch, and automotive vehicle location to provide the drivers with needed information. However, a lack of available parking still exists with supply outstripped by the demand.

The State passed the Proposition 1B funds with a portion specifically dedicated to identified trade corridors. Around $2 billion dollars will be allocated with another $1 billion to be used for air quality improvements. This amount is not sufficient to meet truck parking needs.

The region needs to expand its focus on truck parking in the following areas:

- Goods movement planning needs to recognized as a separate and distinct discipline.
- Newly built warehouses areas should be located to ensure that the facilities are connected to the state highway well and authorized truck routes. (When STA terminal access is not determined, roadways can be significantly damaged and accompanied by safety issues. This also affects that tax base with the repairs coming back to the local agencies.)
- Environmental, community, and public health impacts.
- Multimodal policy planning, funding analysis, and commitment at the local level. (i.e., ancillary services for the drivers would be considered when warehouses are planned)
- More creative funding partnerships and arrangements such as public-private partnerships.

Question was raised as to whether Caltrans had a policy regarding its potential participation in a local public-private partnership and if the agency had completed any surveys within the trucking industry as to the willingness of the industry, or the independent truckers, to participate in this type of funding?

Mr. Spencer responded that Caltrans, as a rule, has not done any public-private partnerships on truck stops. FHWA had previously restricted the use of rights-of–way. Caltrans and the FHWA are beginning to have discussions and look at proposals on the idea. With regards to working with independent truckers, one of the problems in the trucking industry is that the parking fees can not be passed along to the shipper or the consignee.

With regard to proposed land use and growth, a suggestion was made that SCAG make a set of recommendations to local planning agencies that the parking issue be addressed by local communities when those communities build transloading facilities or large distribution centers. If the set recommendations were in the Regional Transportation Plan, when cities apply for the project applications, the recommendations could be used as a reference to illustrate that the issue is regional.

5.0 STAFF REPORT

Date, time, location, and number of meetings per year of the GMTF will be discussed at the next meeting on June 18th.

6.0 COMMENT PERIOD

Question was raised regarding the status of the Multi-County Goods Movement Plan. Sam Morresey, Wilbur Smith, stated that as of last Wednesday, Metro's Planning and Policy Board unanimously adopted the Plan. It was on the docket for the May 22nd METRO Board meeting. The Plan is on the meeting agendas of two other project partner's Boards for May with the remainder in June and July. At this time, no agency has adopted it at the Board level. A requested was made that an update be put on the June 18th agenda regarding the revised scope and schedule on the SCAG consultant for follow-on work to the Multi-County Goods Movement Plan.

A request was made that a representative of California Air Resources Board (ARB) make a presentation on the health risk assessments related to railyards as rail yards have pose

significantly elevated cancer risks. Additionally, there should also be an allowance for some of the community based groups surround the railyards to also participate.

A request was made that there be a summary report at an upcoming meeting of the GMTF on Proposition 1B money, both the TCIF infrastructure funds and the mitigation funds, on how allocated funds will benefit the SCAG region.

7.0 ADJOURNMENT

Hon. Art Brown adjourned the meeting at 11:20 a.m.
The next committee meeting will be held on June 18, 2008 at the SCAG office in Los Angeles.

REPORT

DATE: June 18, 2008

TO: Goods Movement Task Force

FROM: Mike Jones, SCAG Staff, (213) 236-1978, jonesm@scag.ca.gov

SUBJECT: Cities of Port Hueneme and Oxnard Truck Traffic Study

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BACKGROUND:

The Southern California Association of Governments (SCAG) and the Cities of Port Hueneme and Oxnard commissioned a truck traffic study to analyze existing traffic conditions and identify traffic impacts and congestion generated by truck trips traveling on local arterial roadways. Truck trips in the study area are generated by a variety of land uses, including the Port of Hueneme, the Naval Base Ventura County (NBVC), and numerous other private businesses such as agricultural uses, automobile distributors, sod farms, offshore oil operations, and community commercial uses. The study is focused on assessing the impacts caused by existing truck traffic in the study area and identifying strategies for addressing the identified impacts. The work effort also examined the origins, destinations, and routes traveled by heavy trucks through the Cities of Port Hueneme and Oxnard.

Mr. Bill Delo, IBI Group, will present findings from the Cities of Port Hueneme and Oxnard Truck Traffic Study.

CITIES OF PORT HUENEME/OXNARD
TRUCK TRAFFIC STUDY

06.18.2008

IBI GROUP

STUDY OVERVIEW

- Collect data:
  - Existing truck volumes
  - Truck origins and destinations
  - Distribution of truck trips
- Analyze traffic impacts of truck trips in study area
- Identify sources of truck trips
- Recommend improvements and strategies to reduce truck impacts on traffic

STUDY AREA

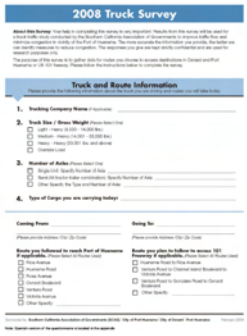
- Focused on Port Hueneme/Oxnard area
- Numerous sources of truck trips
- Traffic analysis examined 25 intersections
- Focus on existing conditions

DATA COLLECTION

- Several components to data collection effort:
  - Traffic counts
    - Daily roadway auto and truck volumes
    - Peak hour intersection auto and truck volumes
  - Truck driver surveys
  - Private business telephone surveys

TRUCK DRIVER SURVEYS

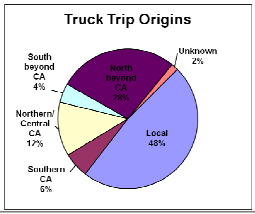
- Surveys developed for Port of Hueneme and Naval Base Ventura County
- Port of Hueneme
  - 1,200+ surveys (over 90% response rate)
- Naval Base Ventura County
  - 200+ surveys (over 90% response rate)

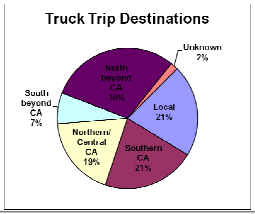

2008 Truck Survey

Truck and Route Information

PORT OF HUENEME TRUCK DATA

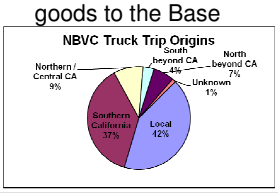
- Daily average of 125 trucks entering Port = 250 two-way trips per day
- Over 80% of truck trips are semis/tractor-trailers
- Perishable goods are most common cargo – 66%

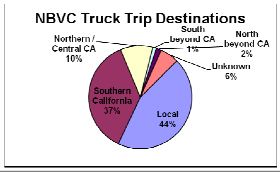




NBVC TRUCK DATA

- Survey focused on Victoria Avenue gate
- Daily average of 90-95 trucks entering the Base = 180-190 two-way trips per day
- Greater range in truck size than Port of Hueneme
- Majority of truck trips are related to delivering goods to the Base





PRIVATE BUSINESS SURVEYS

- 14 local businesses surveyed via phone
  - Auto distributors, agriculture, oil, sod farm
- Small sample of truck trip generation in study area
- Questions focused on truck trip generation and distribution on local roadway network
- Key points:
  - Numerous sources of truck trips
  - Numerous destinations
  - Access to US-101 is important

EXISTING TRAFFIC CONDITIONS

- Existing conditions analysis at 25 intersections
- Analysis methodology consistent with Port Hueneme/Oxnard guidelines
- 6 intersections do not operate at acceptable level of service

FINDINGS

- Port of Hueneme and Naval Base Ventura County
  - Major truck trip destinations in study area
  - Generate a relatively small percentage of the total number of trucks in the study area
- Numerous smaller businesses combine to generate the majority of truck trips
- Hueneme Road/Rice Ave corridor is well utilized as access route from Port to US-101

RECOMMENDATIONS

- Improve Victoria Ave/Channel Islands Blvd and Rice Ave/Gonzales Rd intersections
- Implement recently funded Rice Ave interchange reconfiguration
- Install directional signage to encourage trucks to use Hueneme Rd and Rice Ave
- Implement traffic signal coordination on Hueneme Rd and Rice Ave
- Widen Hueneme Rd to four-lane arterial between Ventura Rd and Rice Ave

RECOMMENDATIONS

- Continue to pursue the grade separation of Rice Ave rail crossing at 5th St
- Work with Caltrans to install signage on US-101 identifying preferred Port of Hueneme and NBVC access routes
- Incorporate noise-reducing design features into new residential developments near truck routes

NEXT STEPS

- Identify funding opportunities & responsibilities for improvements
- Monitor future changes to traffic volumes and truck traffic sources
- Explore additional opportunities with Proposition 1B, Homeland Security, and other sources to fund improvements for security and intelligent transportation systems (ITS)

REPORT

DATE: June 18, 2008

TO: Goods Movement Task Force

FROM: Mike Jones, SCAG Staff, (213) 236-1978, jonesm@scag.ca.gov

SUBJECT: Inland Port Feasibility Study

BACKGROUND:

In 2005, SCAG retained the Tioga Group to perform the Inland Port Feasibility study. An inland port facility offers broad potential benefits in facilitating goods movement, encouraging economic development, reducing traffic congestion, and otherwise promoting regional objectives of the 2004 Regional Transportation Plan. The objective of the study was to determine which of these benefits could be realized, in which kinds of facilities, and at which sites.

Mr. Dan Smith of the Tioga Group will provide a presentation completed work related to matching an inland port strategy with potential locations, site/vehicle-miles-traveled (VMT) tradeoffs, alternatives to Inland Empire sites for an inland port, and rail capacity constraints. Final conclusions from the study will also be discussed concerning the overall feasibility of the inland port concept for the SCAG region.

Tioga

Inland Port Feasibility Study
Summary Findings
Technical Advisory Committee Presentation

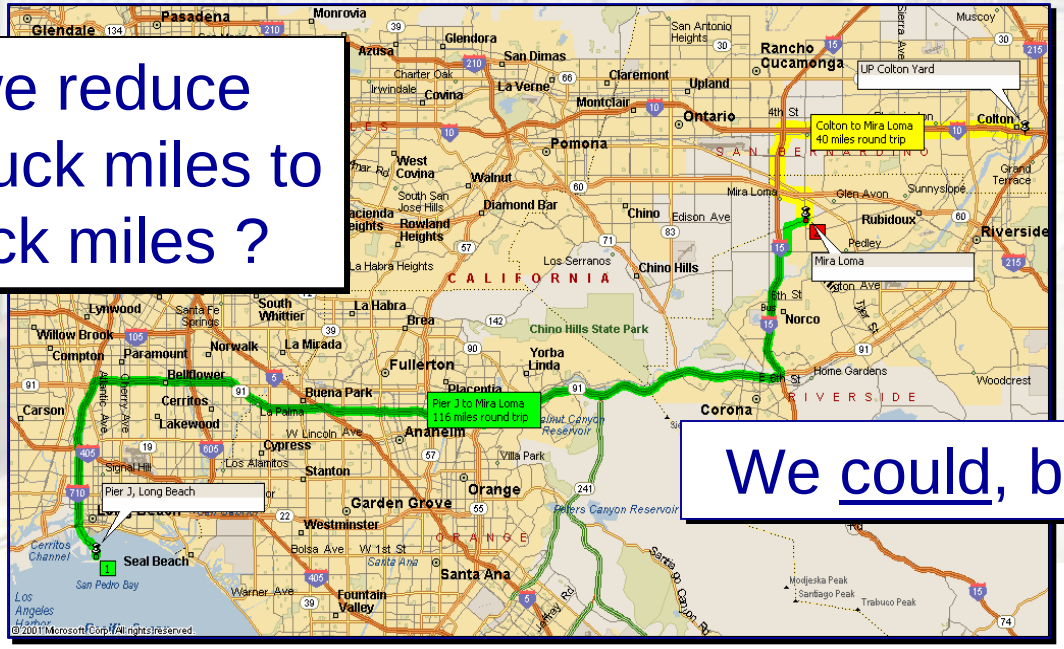
SOUTHERN CALIFORNIA
ASSOCIATION of GOVERNMENTS

June 11,2008

SCAG Inland Port Study Objectives

- Determine the purpose and benefits of an Inland Port and the various functions it might include
- Identify the potential utility of an Inland Port to users and stakeholders in the goods movement system
- Identify the potential freight traffic congestion relief

Can we reduce 116 truck miles to 40 truck miles ?



We could, but…

Summary Inland Port Purposes and Benefits

An Inland Port could serve the following purposes in the SCAG Region.

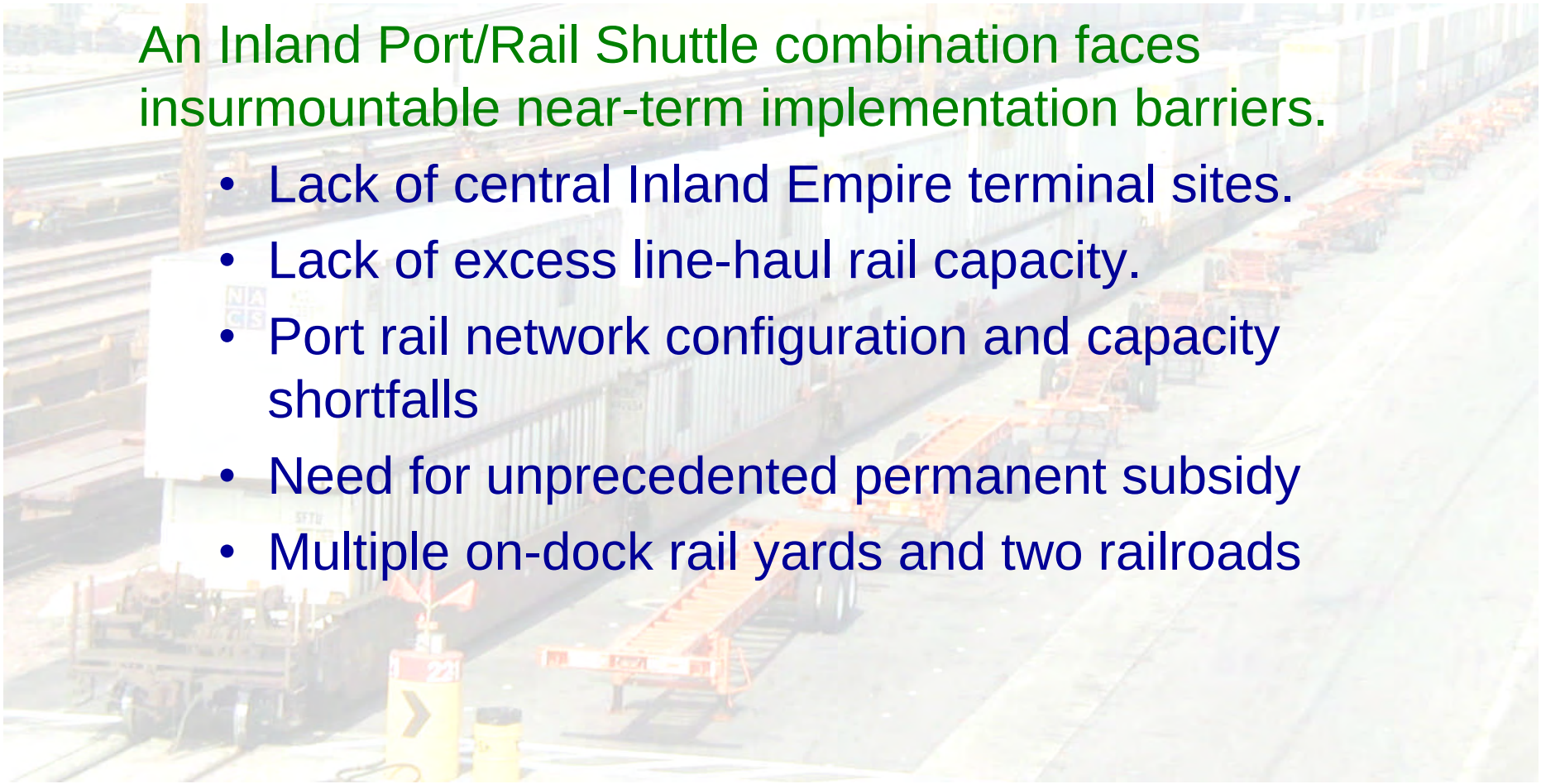
- **Freight Traffic Congestion Reduction. By diverting port-related truck trips to rail, development of an inland port could reduce the net truck VMT required to transport future cargo volumes.**
- **Emissions Reduction. By diverting port-related truck trips to rail, development of an inland port could also reduce the net emissions (especially diesel particulate matter) associated with future freight flows.**
- **Influencing Economic Development. By encouraging efficient patterns of logistics-related business development, the presence of an inland port could assist in achieving long-term land use policy goals for inland areas.**

Summary Findings: Benefits

An Inland Port/Rail Shuttle combination…

- … is technically feasible.
- … can reduce net VMT and highway congestion.
- ... can favorably influence land use patterns.
- … could reduce net emissions, depending on truck/rail tradeoffs and technologies.
- … is economically comparable to other congestion relief options.

Summary Findings: Implementation Barriers



An Inland Port/Rail Shuttle combination faces insurmountable near-term implementation barriers.

- Lack of central Inland Empire terminal sites.
- Lack of excess line-haul rail capacity.
- Port rail network configuration and capacity shortfalls
- Need for unprecedented permanent subsidy
- Multiple on-dock rail yards and two railroads

Summary Findings: Political/Institutional Barriers

An Inland Port/Rail Shuttle combination also faces serious political and institutional barriers.

- Lack of railroad, customer or ocean carrier interest
- Community and regional planning opposition
- “Invisible” VMT and congestion benefits
- Low regional priority in an era of multiple needs and limited resources

Summary Findings: Long-Term Outlook

The long-term outlook for an Inland Port/Rail Shuttle is mixed.

- Long-term potential at Victorville/SCLA, Barstow, or the Antelope Valley
- Possible short-term demand due to drayage capacity shortage
- Minimal impact of higher fuel prices
- Reduced emission benefits due to cleaner drayage trucks

Agile Port – *A Different Concept*

- The Agile Port concept is rail transfer of unsorted inland containers from vessel to an inland rail sorting point, and then to inland destinations.
- The inland sorting terminal would not generate local logistics development or employment, and would likely meet local opposition.
- The existence of two competing railroads might require two separate Agile Port systems.
- The inland sorting point does not need to be in California.
- There are no current Agile Port proposals of this type, although the term is being applied to other concepts.

Feasibility: The "Commuter" Shuttle Concept

Original Concept

- PHL switching at ports
- Large, conventional inland terminal
- Third-party terminal operations
- UP or BNSF operation
- Operating subsidy

Problems

- No place for large inland terminal
- Institutional and economic barriers to UP or BNSF commitments
- Rail capacity shortfall

"Commuter" Concept

- PHL switching at ports
- Small commuter-style inland terminal – or terminals
- Third-party terminal operations
- UP or BNSF operation with subsidy
- UP or BNSF establish operating windows
- Public capital investment to maintain required capacity with shared use and benefits

VMT Reduction & Tradeoffs

- Sites nearer to Mira Loma (Colton and SBIA) offer a more favorable ratio of truck VMT saved per locomotive mile.
- The SCLA site shows a much lower ratio of VMT saved due to:
  - Longer truck trips between Victorville and Mira Loma
  - Longer rail trips between the Ports and SCLA.
  - Additional locomotive power required to climb Cajon Pass.
- Adding drayage trips between marine terminals and a central departure point for a rail shuttle would reduce the advantages.

Factor	Inland Port Location Example		
	Colton	SBIA	SCLA
Approx. One-way Rail Miles from Port	91	83	113
Approx. RT Rail Miles	182	166	226
Est. Locomotives per train	2	2	3
Est. Locomotive Miles per Train	364	332	678
Est. Rail Switching Miles Per Train	10	10	10
Est. Total Locomotive Miles per Train	**374**	**342**	**688**
VMT Savings Per Truck Trip	91.8	76.2	24.4
VMT Savings: 100-Container Trains	9,180	7,620	2,440
VMT Saved per Locomotive Mile	**25**	**22**	**4**

Emissions Reduction Potential

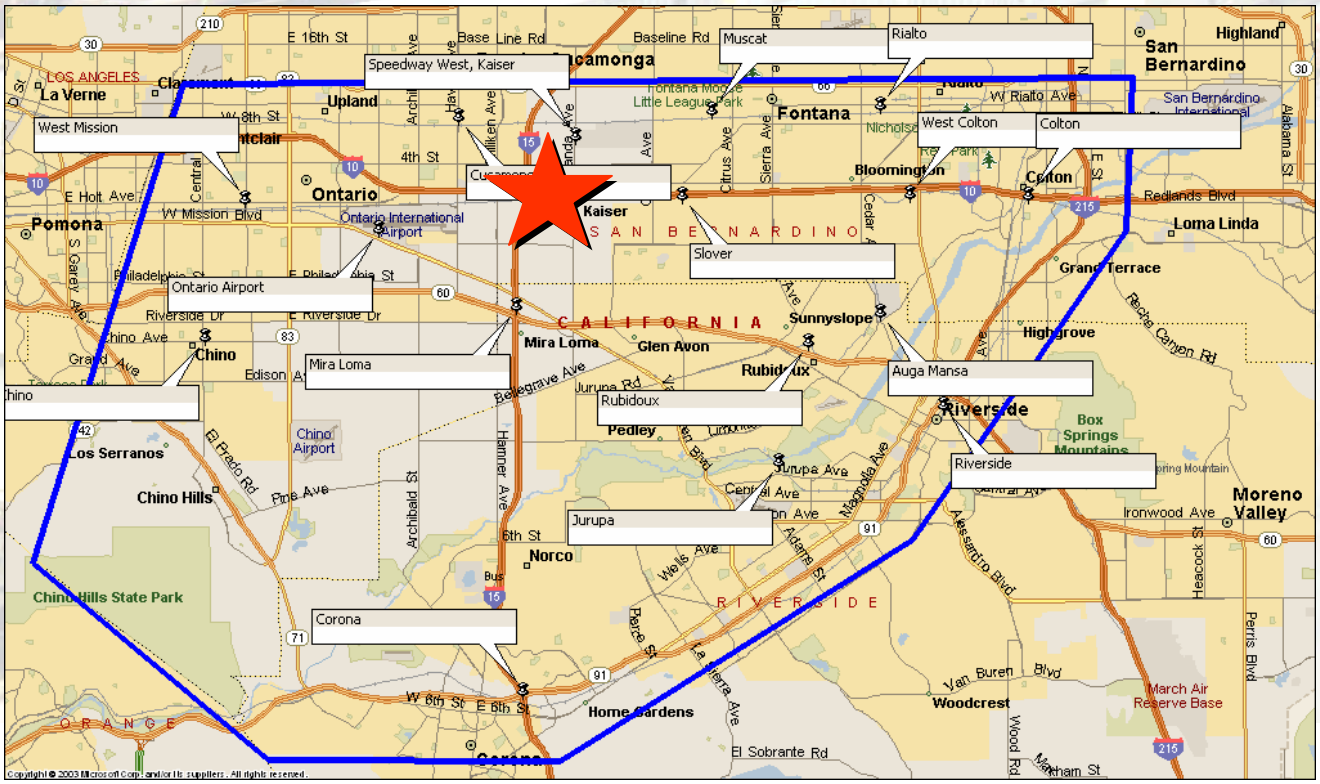
The emissions reduction potential depends on truck/rail tradeoffs and technologies.

- **Rail distance from the Ports to Mira Loma is about 64 miles, about the same as by highway.**
- **Port-area switching tends to increase rail emissions.**
- **New "Tier 2" locomotives (eventually Tier 4) drastically reduce locomotive emissions.**
- **2007 and 2010 standards and the Ports' Comprehensive Truck Plan will cut truck emissions as well, reducing rail advantages.**

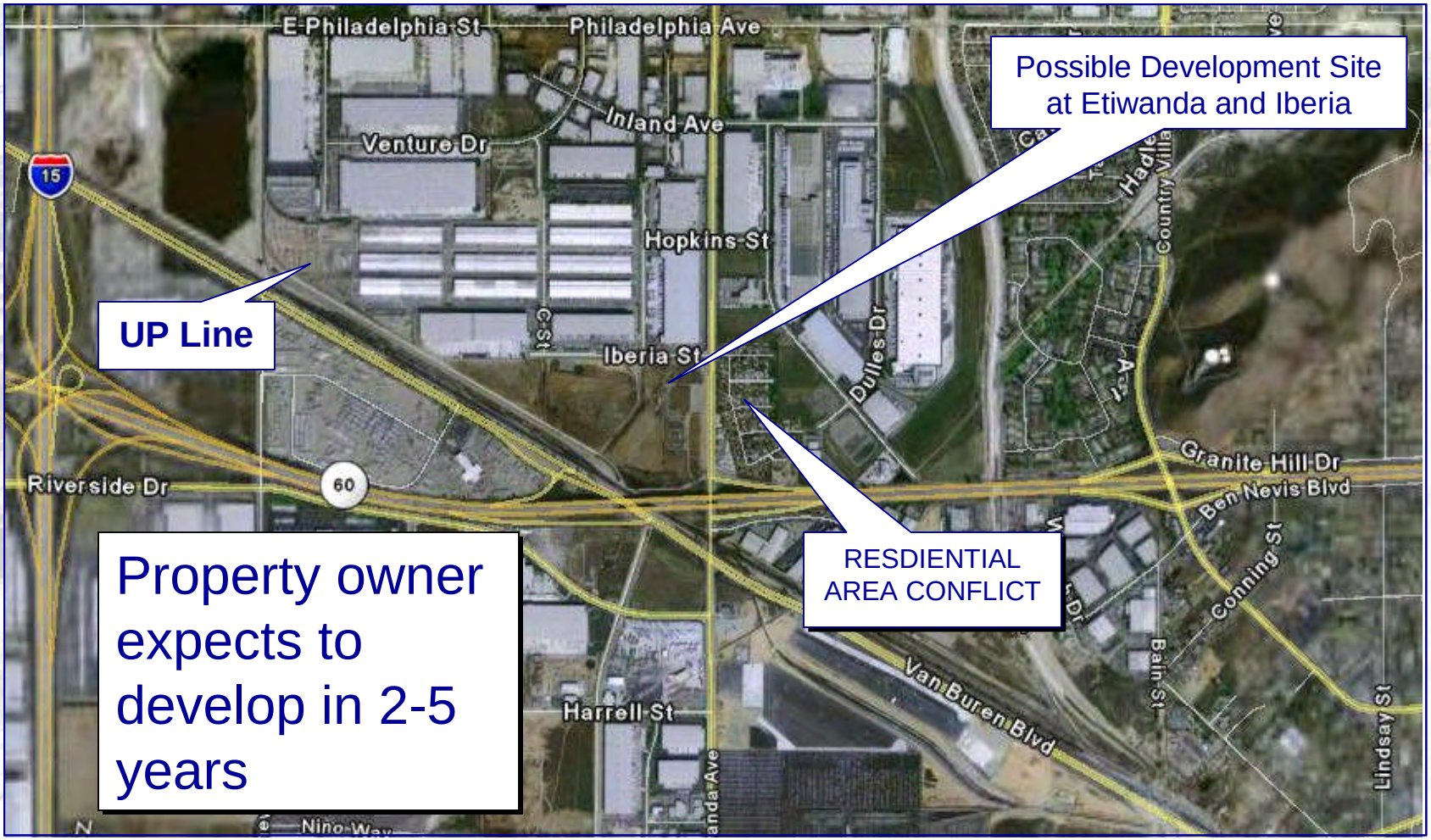
Because of the tradeoffs and the need for trucking inland, the emissions benefits are likely to be small.

Lack of Inland Empire Terminal Sites

- "Commuter-sized" terminal sites may exist, but are disappearing quickly.
- The lack of site is also a barrier to alternative line-haul technologies



Example: Mira Loma Industrial Area



Lack of Excess Rail Line-Haul Capacity

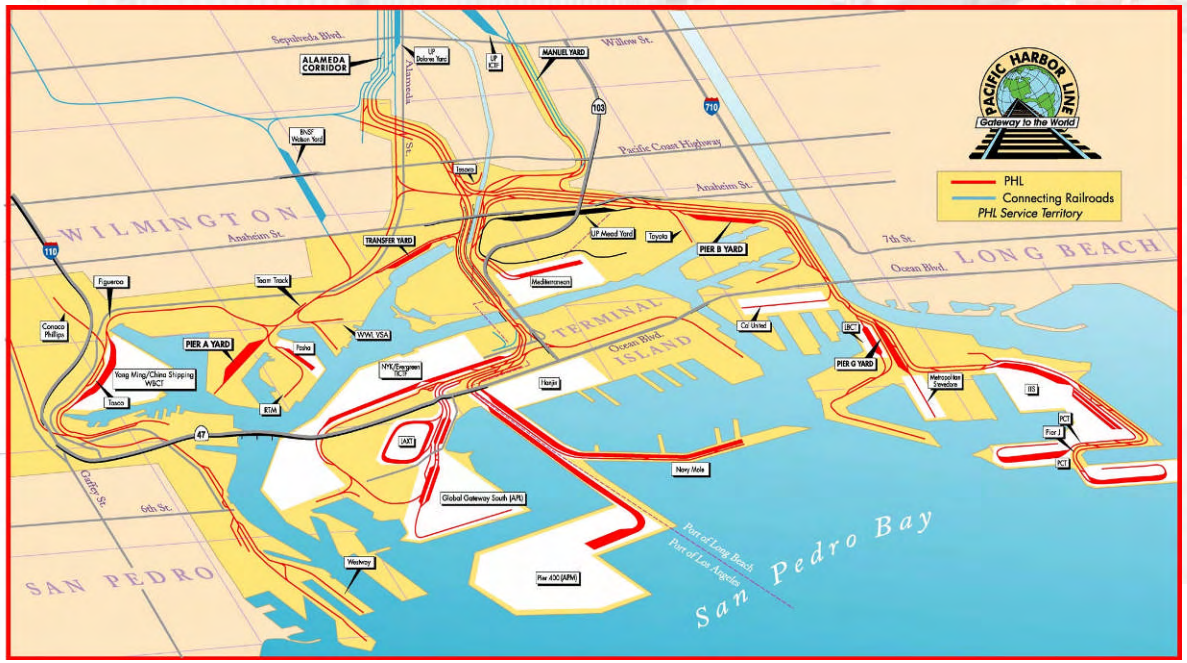
- **Although the railroads have invested and continue to invest in line-haul capacity, growth in international and domestic rail business will use all the available capacity.**
- **Commuter passenger services compete for the same capacity.**
- **Both public and private priorities favor using available freight capacity for long-haul traffic**

San Pedro Bay Intermodal Cargo Forecast

Intermodal Forecast	2005	2006	2010	2015	2020	2025	2030
High Growth Adjusted Forecast							
Low Share	8,080	9,089	11,182	15,553	21,270	28,998	39,808
Base Case Adjusted Forecast							
High Share	8,080	9,089	11,930	16,197	21,648	28,697	38,829
Base Share	**8,080**	**9,089**	**11,488**	**15,529**	**20,621**	**27,056**	**36,210**
Low Share	8,080	9,089	10,471	14,267	18,843	24,681	33,027
Low Growth Adjusted Forecast							
High Share	8,080	9,089	10,956	14,036	17,805	22,274	28,961

Port-Area Rail Configuration and Capacity

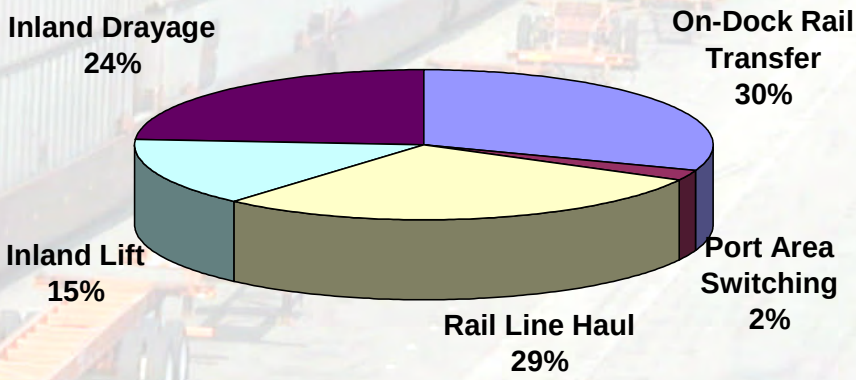
- **Port-area rail infrastructure is already strained by intermodal growth.**
- **Improvements planned by ports are needed to keep up.**
- **With improvements PHL could assemble a Los Angeles shuttle train, but a Long Beach train would be impractical even with improvements.**



Permanent Operating Subsidy

- **For 100-container trains (50 double-stack platforms), round trip rail shuttle costs were estimated at nearly $600 per container.**
- **Rail line-haul costs have the only economies of scale, and are less than 30% of the total.**
- **At current costs, start-up subsidies could be as much as $400 per container (for 50-container trains).**

Item	Inbound	Outbound	Total
On-Dock Rail Transfer	$ 90.00	$ 90.00	$ 180.00
Port Area Switching	$13.34		$ 13.34
Rail Line Haul	$168.10		$ 168.10
Inland Lift	$ 43.21	$ 43.21	$ 86.41
Inland Drayage	$140.00		$ 140.00
Round-Trip Total			**$ 587.85**



	RT Cost
50-container train	$ 679.18
100-container train	$ 587.85
200-container train	$ 514.33
Truck	$ 300.00

Multiple On-Dock Rail Yards and Railroads

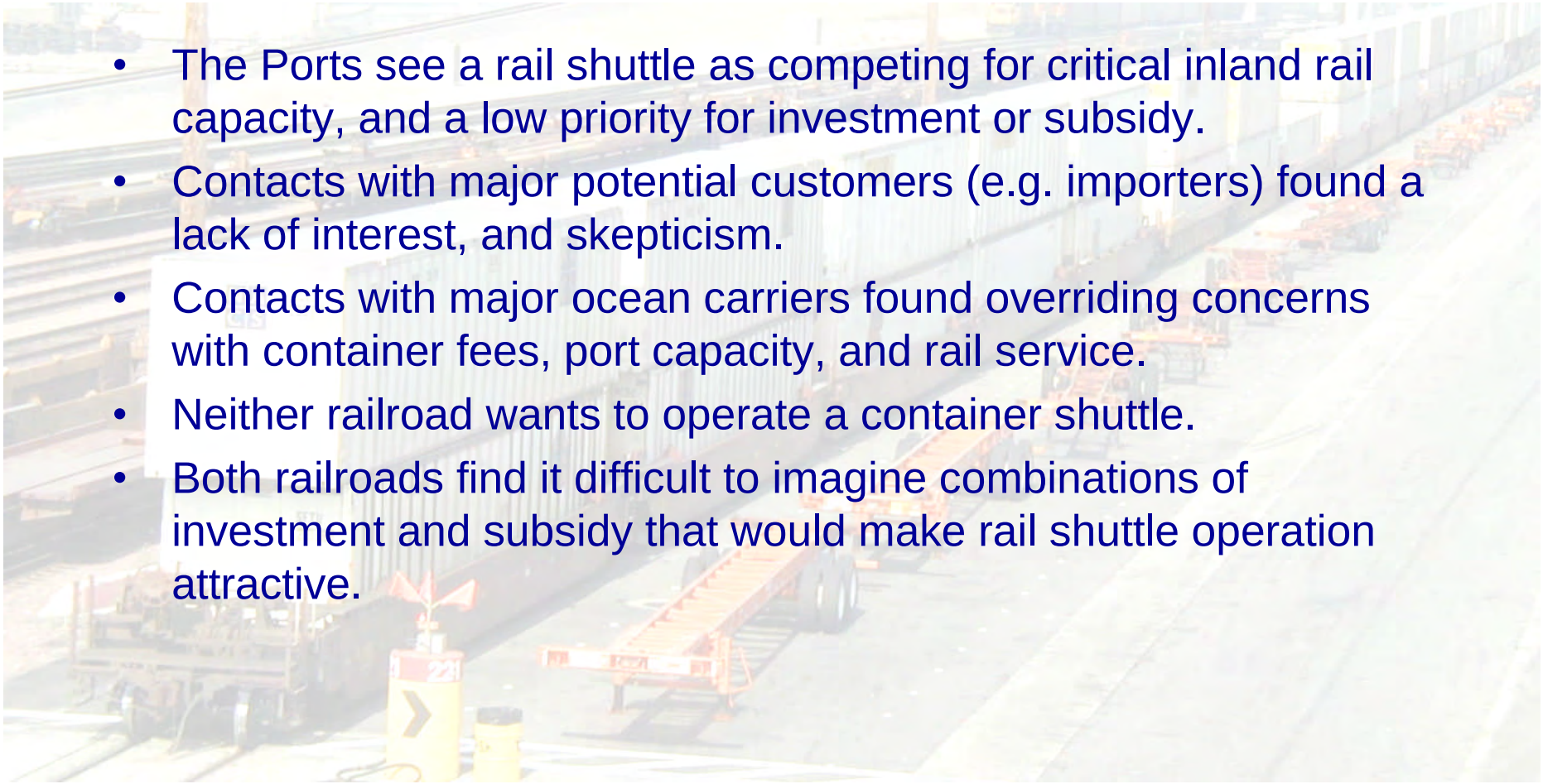
Having multiple on-dock loading points for shuttle trains raises operational and logistics difficulties.

- **Ability of any one on-dock facility to generate a compete eastbound rail loaded shuttle train on given day.**
- **Ability any of any on-dock facility to absorb a complete train of westbound empties on any given day.**

Having two railroads also raises operational and logistics difficulties.

- **Ocean carriers or BCOs typically contract with either UP or BNSF, but not both, for most of their business.**
- **Ability of on-dock railroads to crate trains for each railroad and of PHL network to sort them is questionable.**

Lack of Industry Interest



- The Ports see a rail shuttle as competing for critical inland rail capacity, and a low priority for investment or subsidy.
- Contacts with major potential customers (e.g. importers) found a lack of interest, and skepticism.
- Contacts with major ocean carriers found overriding concerns with container fees, port capacity, and rail service.
- Neither railroad wants to operate a container shuttle.
- Both railroads find it difficult to imagine combinations of investment and subsidy that would make rail shuttle operation attractive.

Local and Regional Opposition

Local opposition has already emerged to the Inland Port concept, even in the absence of an actual proposal.

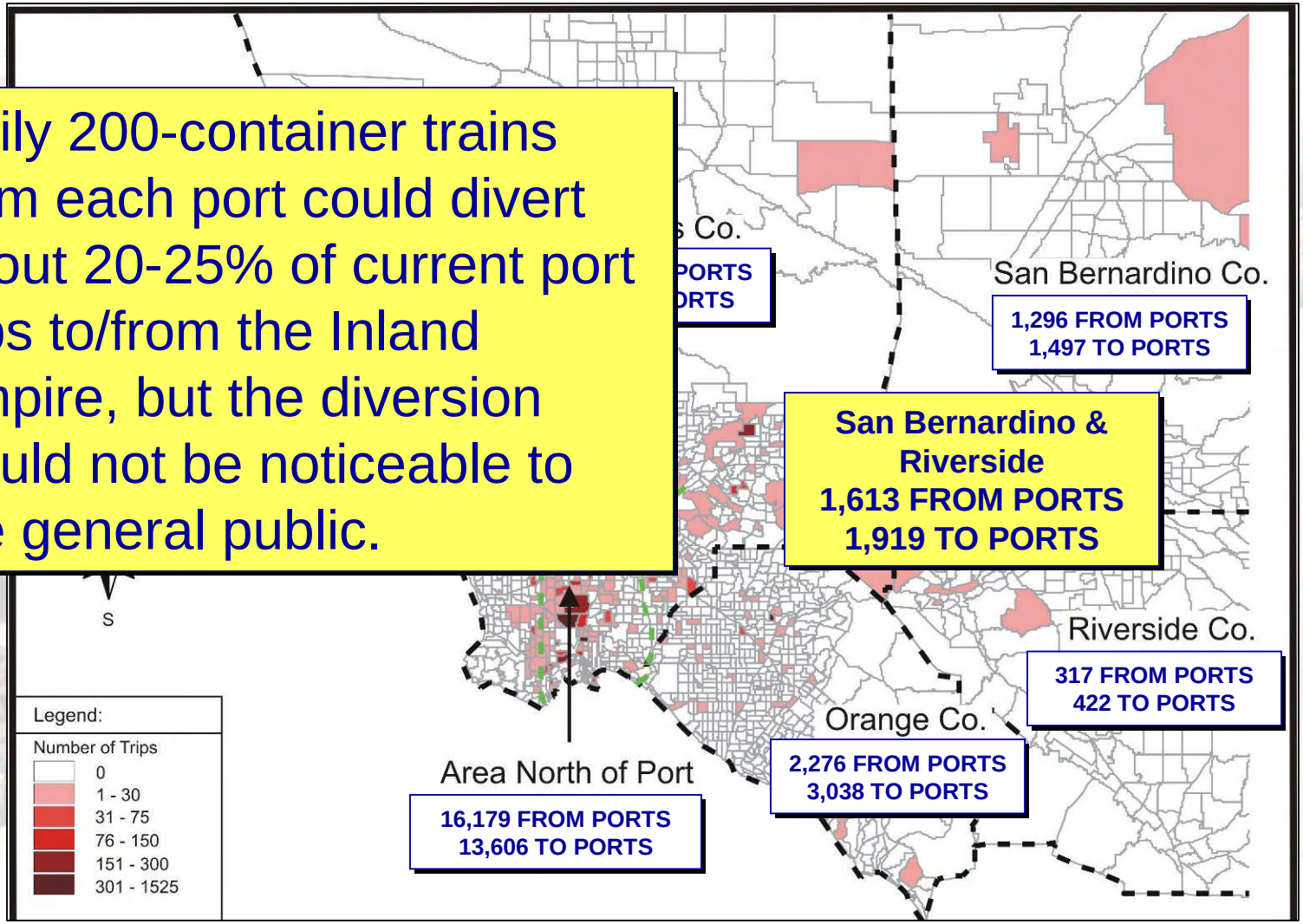
- The central Inland Empire has few if any suitable terminal sites, and is highly sensitive to increased local-area truck traffic.
- Any terminal site will inevitably result in greatly increased local trucking in exchange for fewer highway VMT.

Regional planners and elected officials would likely oppose the development of an inland port terminal in the central Inland Empire.

- Regional plans emphasize employment, and rail terminals have relatively few jobs per acre.
- Rail intermodal terminals are low-value land uses, creating an economic obstacle to redevelopment efforts.

"Invisible" Benefits – Daily Truck Trips

Daily 200-container trains from each port could divert about 20-25% of current port trips to/from the Inland Empire, but the diversion would not be noticeable to the general public.



Low Regional Priority

The regional has multiple congestion and emissions strategies and limited resources.

- **SCAG's RTP puts the region's long-term capital needs at $569 billion, and identifies funding as the major challenge.**
- **Long-haul intermodal, domestic carload, and passenger traffic all compete for rail capacity.**

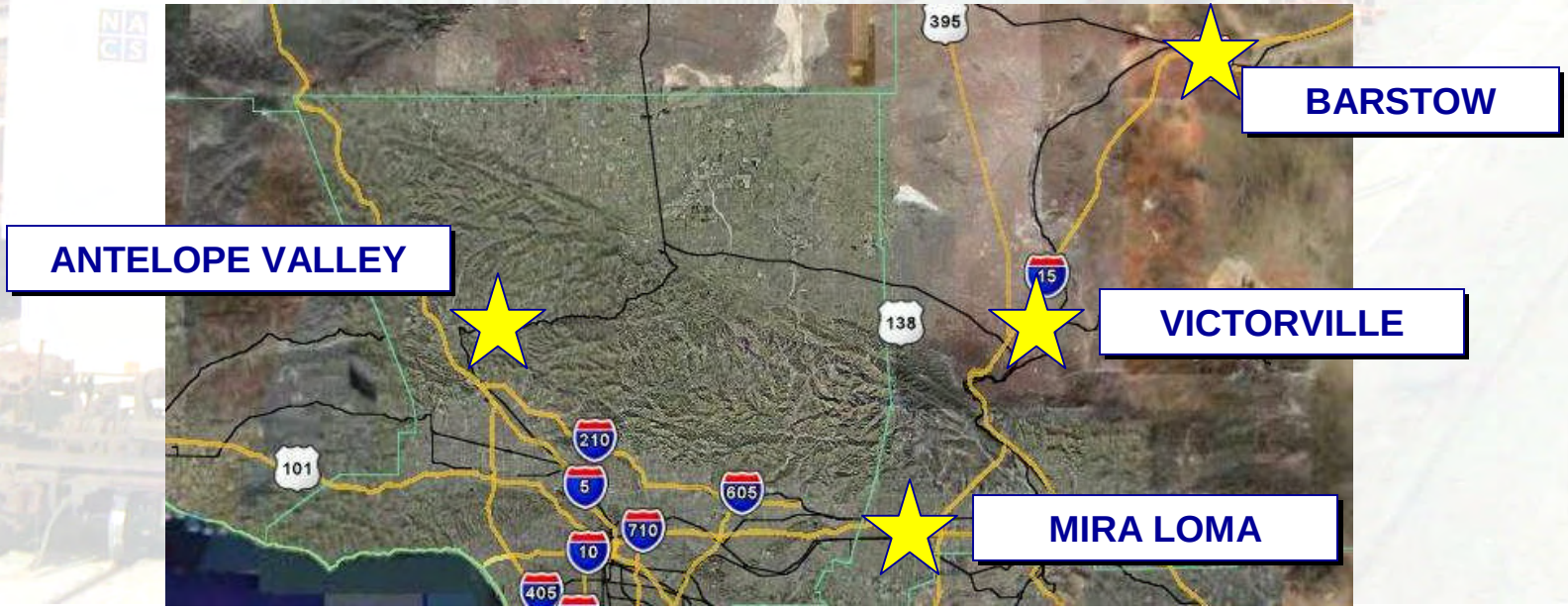
Long-Term Economics and Demand

- Even drastic drayage costs increases would not eliminate the need for subsidy (and would also increase shuttle costs).
- Fuel prices are a relatively small part of total costs, and even greatly increased diesel prices would not eliminate the need for subsidy (and would increase shuttle costs as well).
- A short-term drayage driver shortage could generate short-term demand, but the shortage is unlikely to persist.

Impact Source	*Inland Empire Truck Cost*[1]	*Nominal Subsidy per Unit*	*Annual Subsidy for 50,000 Units*
Current	$300	$287.85	$14.4 million
TWIC	$373	$214.85	$10.7 million
TWIC + LMC/IOO CTP	$446	$141.85	$7.1 million
TWIC + Employee CTP	$540	$47.85	$2.4 million

Long-Term Sites

- The long-term potential for an Inland Port at other sites depends on the emerging development pattern.
- These sites may develop as logistics parks, but may not need a connection to the ports if domestic business predominates.



Alternative Technologies

- Use of alternative technologies (e.g. LIM, MagLev) would address the rail line-haul capacity issue, but would not overcome the other implementation barriers.
- To date, alternative technologies have not addressed the port network issue – most anticipate trucking to a central point, which would defeat the purpose.
- Capital costs would be far higher than rail service.
- Communities would likely object to concentrations of truck activity at alternative technologies terminals in the Inland Empire.
- Right-of-way availability is unknown.

Bottom Line

- The Inland Port/Rail Shuttle concept serving the Inland Empire is fundamentally sound and would deliver net public benefits.
- The concept, however, faces an insurmountable combination of implementation barriers.
- The concept also faces major political and institutional barriers, including local opposition and low regional priority.
- Any window of opportunity to start a service into the central Inland Empire has now closed.
- The relatively small benefits would not justify major political and economic efforts to overcome the multiple barriers.
- SCAG should monitor the development of logistics parks in Victorville, Barstow, and Antelope Valley to see if a port linkage emerges.

REPORT

DATE: June 18, 2008

TO: Goods Movement Task Force

FROM: Mike Jones, SCAG Staff, (213) 236-1978, jonesm@scag.ca.gov

SUBJECT: Port and Modal Elasticity Study Phase II

BACKGROUND:

In 2005, SCAG completed Phase I of the Port and Modal Elasticity Study. Key findings from the study included the following:

- San Pedro Bay import volume is much more sensitive to congestion than to container fees. Without congestion relief, in the long-run even a small container fee would drive some traffic away from the SPB Ports.
- A $60 per FEU fee on inbound loaded containers at the SPB Ports would cut both total import volume and total trans-loaded import volume at the SPB Ports by approximately 6%.
- With congestion relief, San Pedro Bay imports are relatively inelastic up to a $200 per FEU charge. At this fee level, total imports via the SPB Ports are estimated to decline by 4% or less, while total trans-loaded volume would rise by an estimated 12.5%. The latter suggests a significant increase in economic activity in Southern California.

Since that time, Leachman and Associates has worked to develop a second phase of the study, with data and assumptions utilized in Phase I being further refined. In Phase II, capabilities have also been developed to conduct "short-term" elasticity analyses.

Mr. Robert Leachman will provide an overview of findings and discuss key insights from the Port and Modal Elasticity Study Phase II.

Port and Modal Elasticity Study – Phase II

Rob Leachman
Leachman & Associates LLC
245 Estates Drive
Piedmont, CA 94611
18 June, 2008

Agenda

- Purpose and scope of study
  - Phase I and Phase II
- Value distribution of imports and efficient supply-chain strategies
- Modeling congestion and container flow times
  - Through ports
  - Through rail terminals
  - Rail line haul
- The short-run elasticity model

Purpose of Study

- Develop analytical model and supporting database to predict flows of containerized imports by port and landside channel as a function of rates and fees, transportation service quality, and potential infrastructure improvements

Phase I

- Completed August, 2005
- "Long-run elasticity model"
  - Takes mean and standard deviation of container flow times by channel as given and fixed input
  - Takes transportation rates and potential port fees as given input
  - Calculates total transportation and inventory costs for 83 major importers and 19 "generic" importers
    - Identifies best supply-chain for each importer
  - Tallies predicted container flows by port and landside channel
- Calculated impact of hypothetical container fees at San Pedro Bay

Phase II

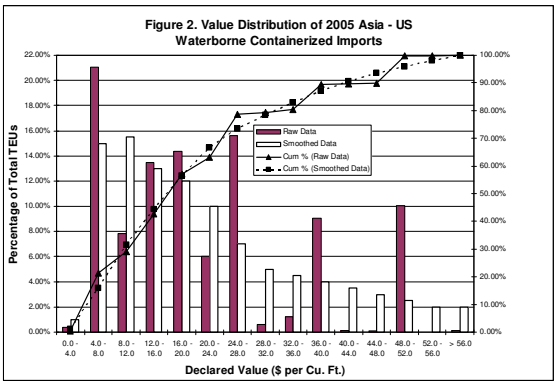
- Commenced in June, 2006
- Outreach to stakeholders
- Updated database on import distributions, transportation rates and transportation service quality
- Developed "Short-run model"
  - Takes infrastructure as given input, calculates container flow times, other inputs same as before
  - Outputs of model are the predicted supply-chains for importers and the resulting total container flows
    - Test impact of fees and of changes to infrastructure or operating hours

Phase II data collection

- Import distribution from 2005 PIERS and WTA summaries of customs data
  - courtesy of POLB and MARAD
- Asia – US vessel strings and port infrastructure updated to mid-2007
- Transportation rate database updated to mid-2007
  - courtesy of IMCs, 3PLs, various importers
- Database on 2006 port volumes vs. container flow times and 2006 rail volumes vs. container flow times
  - courtesy of port terminal operators, BNSF and UP

Import distribution

- Average declared values of 2005 Asia – US imports:
  - Via East Coast and Gulf ports: $18.57 per cubic foot
  - Via West Coast ports: $22.66 per cubic foot
  - Overall: $21.66 per cubic foot
- Little changed from 2003



Efficient supply-chain strategies

- Goods consumed in only one region or goods imported by regional or small importers
  - Direct-ship marine box via cheapest port and landside channel (IPI or truck or local dray) if declared value less than $38 per cu. ft.
  - Direct-ship marine box via cheapest West Coast port and landside channel if $38 per cu. ft. or more
- Goods distributed nation-wide by large importers:
  - Direct-ship if declared value less than $12 per cu. ft.
  - Consolidate-de-consolidate using 5 ports if more than $12 and less than $15 per cu. ft.
  - Consolidate-de-consolidate using 4 ports if more than $15 and less than $22 per cu. ft.
  - Consolidate-de-consolidate using 2 ports if more than $22 and less than $30 per cu. ft.
  - Consolidate-de-consolidate all at LA/LB if more than $30 per cu. ft.

Comments on "ideal" import distribution

- In 2005, 25% of Asia – US imports were < $13 per cu. ft. These goods are most economically handled by shipping the marine box intact via the cheapest channel.
- 17% of Asia – US imports were > $30 per cu. ft. in declared value. If distributed nationwide, such goods are most efficiently handled by consolidating/deconsolidating all US volume through the San Pedro Bay ports.
- Goods in the other 58% category that are distributed nationwide are most economically handled by using a subset of ports, e.g., 2 on East Coast and 2 on West Coast, to do regional consolidation/deconsolidation

Actual vs. ideal import distributions

- In 2006, only about 20-25% of Asia - US imports underwent consolidation-deconsolidation
  - About 75-80% of imports stayed in marine box
  - But only about 50-55% of imports via LA-LB stayed in marine box until arrival at region of ultimate consumption
- Forces to get out of marine box
  - Decline in US dollar, rising cost of imports
  - Consolidation of US retail industry
  - Increased sophistication in supply chain management
  - Increased waterborne vs. landside transportation cost
- Forces to stay in marine box
  - Increased landside vs. waterborne transportation cost
  - Scarcity of domestic equipment for trans-loading

Modeling congestion at port terminals

- Strategy:
  - Collect data on container dwell times from terminal operators
  - Fit queuing model to data
  - Use model to predict change in port terminal dwell times for import containers ("port cycle times") as a function of traffic level and infrastructure investment and hours of terminal operation

Modeling congestion at port terminals

- 2006 monthly data received for four West Coast terminals
  - Import and export lifts, acres utilized, import and export container dwell times, hours gate open, no. of lift crews working
- Standard industry metric: lifts per acre
- Our metric: lifts per acre per gate-day per crew
  - One gate-day means gate open all day

Queuing Theory applied to ports

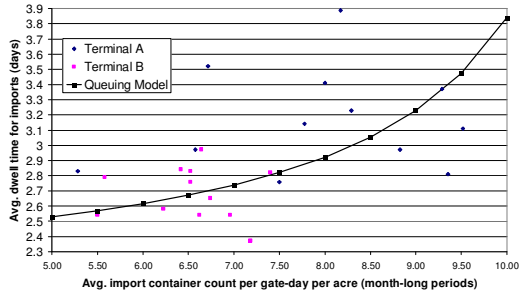
- Total cycle time = Standard cycle time + Wait time
- Standard cycle time = Time to get the box and do the lift
- Wait time is a function of utilization and no. of "servers"
  - Utilization (U) = (actual lifts per acre per gate-day) / (max possible lifts per acre per gate-day)
  - Best-fit of max possible is 24 lifts per acre per gate-day (12 if gate open half-day)
  - No. of servers (m) = no. of crews

Wait time ~ $\frac{U^{\sqrt{2(m+1)}-1}}{(1-U)m}$

Total cycle time = $A + B * \frac{U^{\sqrt{2(m+1)}-1}}{(1-U)m}$

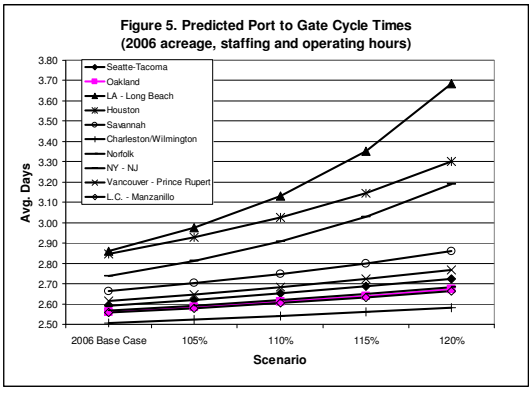
Fit *A*, *B* by regression to actual data

Figure 4. Modeled and Actual Import Container Dwell Times vs. Import Volume at Selected Terminals (one crew per shift, three shifts per day)



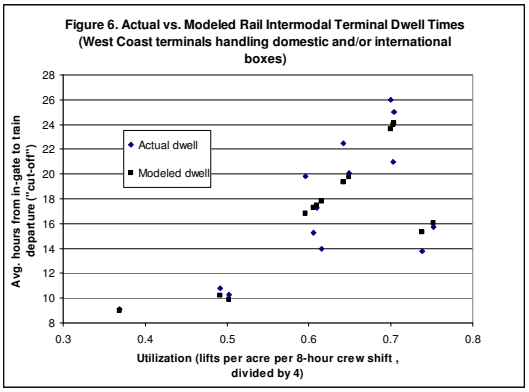
Prediction of future port cycle times

- Consider a particular scenario for Asia – US imports:
  - 2.8% via Vancouver/Prince Rupert
  - 8.0% via Seattle/Tacoma
  - 5.6% via Oakland
  - 45.9% via LA/LB
  - 1.5% via Mexican West Coast
  - 3.6% via Houston
  - 8.4% via Savannah/Jacksonville/Port Everglades/Miami
  - 2.5% via Charleston/Wilmington
  - 7.4% via Hampton Roads/Baltimore
  - 14.4% via NY-NJ



Congestion at rail intermodal terminals

- Similar analytical approach as for port terminals
- Data obtained from RRs concerning 2006 lifts, crew shifts, acreage, dwell times
  - Utilization in this case counts both inbound and outbound lifts
  - Best-fit of max capacity is 4 lifts per acre per 8-hour crew-shift



Congestion in rail line-haul service

- 2006 data received from RRs
  - Train counts by network segment
  - Intermodal service network
    - Routes and segments
    - Mean and standard deviation of transit times
  - Intermodal service statistics in 2006 peak and off-peak periods
    - Mean and standard deviation of terminal time
- 2006 publically-available RR data
  - Network data
    - segments, # of tracks, mileages, speeds

Queuing theory applied to rail

- Total transit time = SCT + Σ {General delay + Single-track delay}
- SCT = Σ (segment length)/(segment speed) + (22.5 mins)*(no. of crew changes) + (90 mins)*(no. of re-fuelings)
- General delay = f (Utilization, no. of servers)
  - Process time (*PT*) = (segment length + train length)/(segment speed) + 2 minutes
  - Utilization (*U*) = (# of trains)* (*PT*) / [(24 hours) * (# of tracks)]
  - No. of servers (m) = no. of tracks

General delay time ~ $\frac{U^{\sqrt{2(m+1)}-1}}{(1-U)m} * PT$

Single-track delay time formula from my 1988 *Transportation Research* article (next slide)

Total cycle time = SCT + (Single-track delay time) + $A + B * \frac{U^{\sqrt{2(m+1)}-1}}{(1-U)m} * PT$

Fit *A*, *B* by regression to actual data

Single-track delay model

- Train must stop in a passing track to clear any opposing movements on the upcoming segment of single track
- Trains tend to fleet, so expected delay is {Probability of encountering a busy period} * {Expected duration of a busy period}

$$P^{delay} = \frac{1}{2}\left[\frac{\left(e^{u/2}-1\right)\left(e^{u}+1\right)}{1+\left(e^{u/2}-1\right)\left(e^{u}+1\right)}\right]$$

$$E^{delay} = P^{delay}\left[\frac{N}{2}e^{u/2} - \frac{(PT)\left(e^{u/2}\right)}{e^{u/2}-1} + L\right]$$

where N is the total no. of trains per hour, PT is the process time, L is the start-up lag, u is the utilization of the single-track segment

Example input data and calculated utilization

	Avg. Speed	Miles	Tracks	Segments	SCT Mins per segment	Cum SCT	PT Mins per segment	Off-Peak U	Peak U
Oakland - Chicago									
Oakland - Shellmound	25	4.5	2	3	4.500	13.500	7.316	0.112	0.114
Shellmound - San Pablo	50	10.1	2	2	6.060	25.620	7.918	0.121	0.124
San Pablo - Martinez	30	16.7	2	7	4.771	59.020	7.868	0.120	0.123
Martinez - Sacramento	55	56.9	2	6	10.345	121.093	12.035	0.150	0.155
Sacramento - Elvas	25	3.1	2	2	3.720	128.533	7.436	0.103	0.106
Elvas - Roseville	40	14.4	2	5	4.320	150.133	6.643	0.082	0.088
Roseville - Binney Jct.	50	35.5	2	4	10.650	192.733	12.508	0.138	0.148
Binney Jct. - Oroville Yard	55	22.4	1	2	12.218	217.169	13.907	0.164	0.174
Oroville Yard - Poe	40	31.6	1	4	11.850	264.569	14.173	0.167	0.177
Poe - Keddie	25	41.8	1	4	25.080	364.889	28.796	0.340	0.360
Keddie - Portola	25	46.3	1	5	22.224	476.009	25.940	0.198	0.216
Portola - Sano	45	83.9	1	9	12.430	587.876	14.494	0.111	0.121
Sano - Weso	60	131.7	1	13	10.131	719.576	11.679	0.089	0.097
Weso - Alazon	55	182.7	2	18	11.073	918.885	12.762	0.173	0.177
Alazon - Wells	55	3.9	1	1	4.255	923.139	5.944	0.120	0.124
Wells - Moor	40	8.9	2	1	13.350	936.489	15.673	0.158	0.163
Moor - Valley Pass	50	24.0	1	3	9.600	965.289	11.458	0.231	0.239
Valley Pass - Lucin	40	39.2	2	4	14.700	1024.089	17.023	0.171	0.177
Lucin - W. Lakeside	50	54.8	1	6	10.960	1089.849	12.818	0.258	0.267
W. Lakeside - E. Lakeside	45	2.7	2	1	3.600	1093.449	5.665	0.057	0.059
E. Lakeside - W. Promontory Point	45	17.6	1	1	23.467	1113.316	25.531	0.514	0.532
W. Promontory Point - E. Promontory Point	45	4.2	2	1	5.600	1099.049	7.665	0.077	0.080
E. Promontory Point - Little Mountain	50	8.1	1	1	9.720	1123.036	11.578	0.233	0.241
Little Mountain - Ogden	50	14.4	2	2	8.640	1130.596	10.498	0.106	0.109

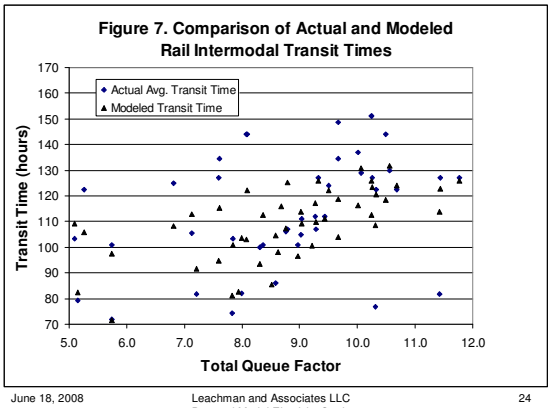


Figure 9. Predicted Increase in Peak-Period Domestic Intermodal Transit Times, as a Function of Intermodal Traffic Growth

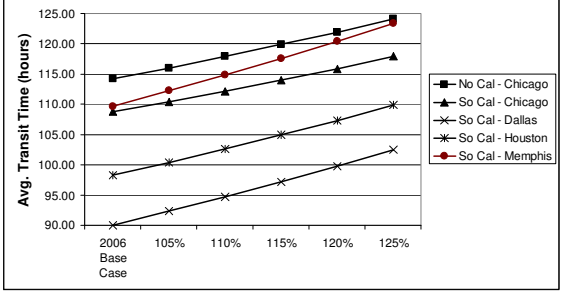
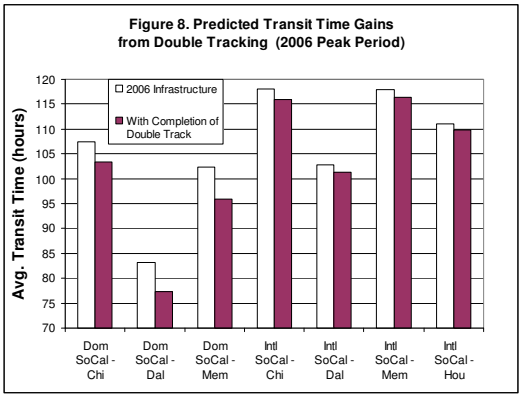


Figure 8. Predicted Transit Time Gains from Double Tracking (2006 Peak Period)



The Short-Run Model

- Initialize flow times, rates, fees, import volumes, port and channel contractual minimums
- Apply Long-Run Model to find least-cost supply-chain for each importer.
- Tally volumes by port and landside channel.
  - If any minimums are violated, move "discretionary" (IPI) volumes so as to satisfy contractual minimums at least additional cost.
- Tally volumes by port and landside channel. Apply congestion models to update transit times.
- Iterate above steps until volumes stabilize.

Next Steps

- Final Report and Short-Run Model submitted to SCAG by June 30, 2008
- A Final Presentation will be delivered after that
- Questions? Please contact me at leachman@leachmanandassociates.com
- Thank you for your attention!